

REMARKS

The applicants' remarks below are preceded by quotations of related comments of the Examiner, in small, boldface type.

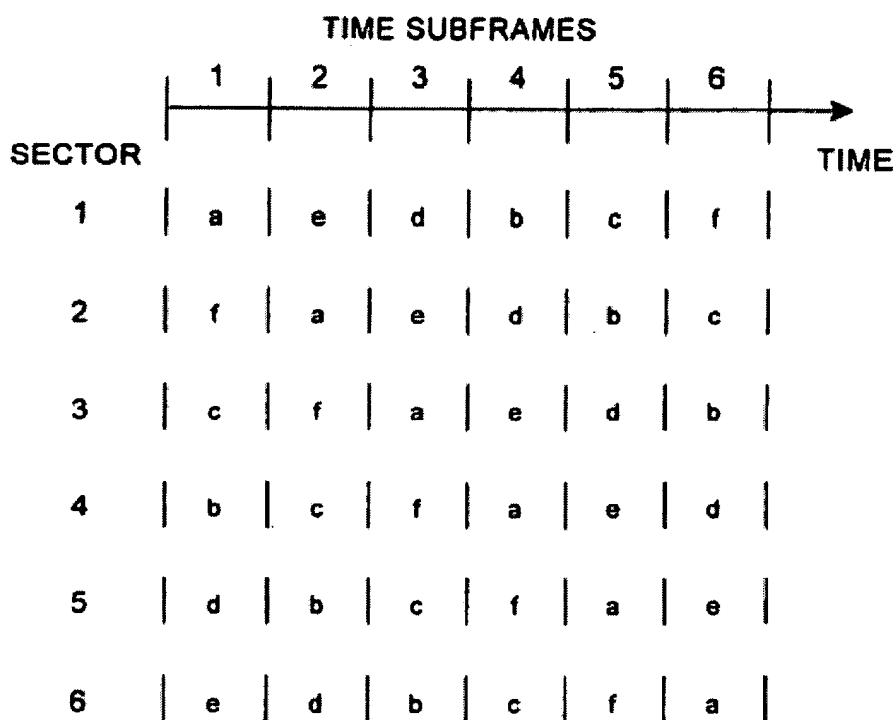
2. Claims 1-14 and 16-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Leung et al. (U.S. Patent 6,262,980).

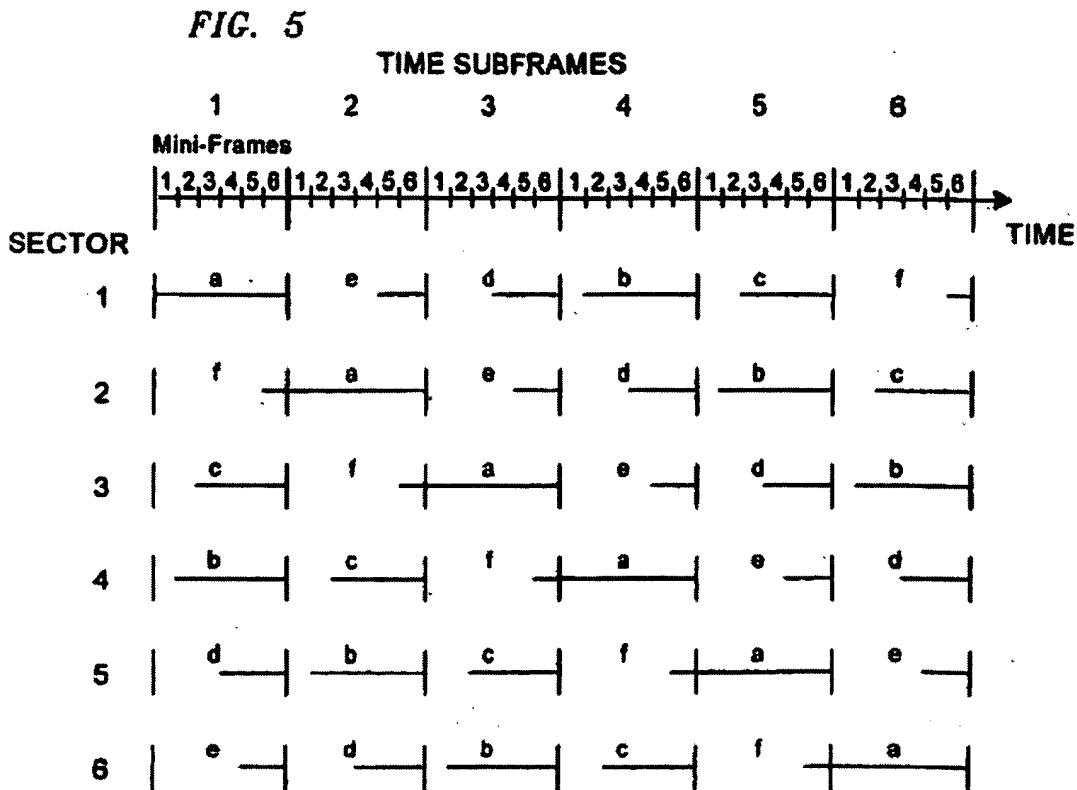
As to claim 1, Figures 2 and 3 in Leung show a method comprising in a cell of a cellular wireless communication system, altering the SIR of at least one user in a sector of the cell by temporarily reducing transmissions on a forward link in at least one other sector of the cell or a sector in another cell in accordance with a pattern (“FIG. 2 shows a service area in a wireless network divided into hexagon shaped cells. Each cell is further divided into multiple sectors numbered 1 to 6, and each sector is covered by a sector antenna co-located with a Base Station (BS), not shown in FIG. 2, at the center of the cell” (Col. 6, lines 51-56). “Time is slotted such that a packet can be transmitted in each slot, and the downlink and uplink between terminals and BS are provided by Time-Division Duplex (TDD) using the same radio spectrum” (Col. 6, lines 64-67). “Time slots need to be dynamically allocated to various transmitters to send data packets such that a given SIR can be achieved at the intended receiver for successful reception” (Col. 7, lines 2-5). “When the receiving locations are poor, few BS's should be scheduled to transmit at the same time so that a target SIR threshold can be met for successful reception at the receiving ends” (Col. 7, lines 31-34). “In the SRA method, time slots are grouped into 6 subframes and sectors are labeled by 1 to 6 anti-clock-wise as shown in FIG. 2” (Col. 7, lines 63-65). “It is easy to see from FIG. 3 that if all sectors have traffic load of less than one-sixth of total channel capacity, all packets are transmitted in different time subframes (labeled “a” in each sector), thus causing no interference within the same cell” (Col. 8, lines 28-32). “Besides managing intra-cell interference, the SRA method helps avoid interference from major sources in the neighboring cells. This is particularly so when the traffic load is low to moderate. Consider the downlink for Sector 1 in the middle cell of FIG. 2. Sector 2 in the bottom cell and Sector 3 in the upper cell are the major sources of interference. By examining the staggered order for Sector 1,2 and 3, note that they will not transmit simultaneously, and thus will not interfere with each other, provided each has a traffic load of less than one-third of total channel capacity (i.e., using only subframes a and b for transmission)” (Col. 8, lines 38-48)).

Amended claims 1 and 16 require determining a current state of transmissions in one or more sectors and then basing a pattern of reducing transmissions on “the determined current state of transmissions”. (emphasis added) Claim 19 requires a sector controller that coordinates the turning on and off of transmissions in sectors “based on a current transmission state in at least another one of the sectors.” (emphasis added) Leung does not disclose or suggest such a system.

While Leung describes a "dynamic resource allocation" system (see Abstract), Leung allocates data packets to timeslots according to a fixed allocation pattern. In particular, Leung describes two allocation patterns in which data packets are allocated to timeslots: the Staggered Resource Allocation (SRA) pattern (shown in FIG. 3 below) and the Enhanced Staggered Resource Allocation (ESRA) pattern (shown in FIG. 5 below):

FIG. 3





In the SRA allocation pattern shown in FIG. 3, Leung explains that “[f]or example, Sector 1 first schedules packets for transmission in time slots of subframe 1 (denoted by a). If it has more traffic to sent, it then uses subframe 4 (b), subframe 5 (c), etc. until subframe 6 (f).” (8:8-11). Thus, the SRA allocation pattern allocates packets for transmission in a sector of a cell based on a fixed pattern, not based on the “current state of transmissions” of one of the other sectors in the cell or a sector in another cell (claims 1 and 16) or “a current transmission state in at least another one of the sectors” (claim 19). Similarly, in the ESRA allocation pattern shown in FIG. 4, Leung states:

Each subframe is further divided into six “mini-frames,” which are also labeled 1-6. The sizes of mini-frames are chosen to match the expected traffic demand of the terminal classes and each sector uses the subframes according to the staggered order, given by “a” to “f” in FIG. 5. It is important to note that slots of only those mini-frames marked with a solid line are available to the corresponding sector indicated on the left-most side of the figure. ... For instance, Sector 2 can use all

mini-frames in Subframe 2, but it can schedule transmission only in Mini-frame 5 and 6 in Subframe 3. The other mini-frames in Subframe 3 are unavailable to Sector 2.

(10: 35-50).

Thus Leung teaches a system that allocates packets for transmission in a sector in a cell based on a fixed pattern, not based on the “current state of transmissions” of one of the other sectors in the cell or a sector in another cell (claims 1 and 16) or “a current transmission state in at least another one of the sectors” (claim 19). Accordingly, claims 1, 16, and 19 are patentable for at least this reason. Dependent claims 2-15 depend from independent claim 1 and are patentable for at least the same reasons discussed above. Applicants, therefore, ask that claims 1-19 be allowed.

New independent claim 20 requires ceasing transmission of a data packet in a sector when the sector receives an acknowledgement signal from the mobile user. This limitation in combination with the other claim elements is not disclosed or suggested by Leung or other cited art of record, and, accordingly, applicants ask that new claims 20-38 be allowed.

Cancelled claims have been cancelled without prejudice.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

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Attorney's Docket No.: 12144-009001

Enclosed is a \$645.00 check for excess claim fees and a \$55.00 check for the Petition for Extension of Time fee.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 8/25/04



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